

ABSTRACT OF THE DISCLOSURE

An image pickup apparatus having a higher resolution and S/N ratio by use of a line confocal optical system and a photomask defect inspection system using the same. A first spatial filter having a plurality of slits extending in a direction perpendicular to a direction of movement of a sample is arranged in front of a light source and illuminates the sample with lines of light. The transmitted light or reflected light from the sample is received by an image sensor through a second spatial filter having slits substantially the same as the first spatial filter. Each image sensor has light receiving elements arranged in a two-dimensional array and transfers charges stored in the light receiving elements for each line. A charge transfer speed of the image sensors and speed of movement of the sample are linked with each other. The sample is illuminated a plurality of times, the charge produced by each illumination is accumulated, and the cumulative charge is output. By configuring the apparatus in this way, a line confocal optical system is formed, a greater amount of charge is built up by the illumination by the plurality of lines of light, and the S/N ratio is remarkably improved.

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